



RON MOSS

RUBIDIUM

Element Symbol: **Rb**

Atomic Number: **37**

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Moreton Bay College
Breadth of mind. Depth of heart.

Rubidium is a soft, silvery-white metallic element of the alkali metal group. It has properties similar to other elements in group 1, such as very rapid oxidation in air, easily vaporized and has a convenient spectral absorption range, making it a frequent target for laser manipulation of atoms.

Rubidium can be liquid at ambient temperature, but only on a hot day given that its melting point is about 40°C. It ignites spontaneously in air and reacts violently with water and even with ice at -100°C, setting fire to the liberated hydrogen. As so with all the other alkali metals, it forms amalgams with mercury. It alloys with gold, cesium, sodium, and potassium.

Rubidium was discovered in 1861 by Robert Bunsen and Gustav Kirchhoff, and is one of four elements discovered by spectroscopy. Rubidium originates from the Latin word 'rubidus' meaning deepest red, and was named after the two prominent red lines of its spectrum.

Rubidium is considered to be the 16th most abundant element in the earth's crust. The relative abundance of rubidium has been reassessed in recent years and it is now suspected of being more plentiful than previously calculated.

No minerals of rubidium are known, but rubidium is present in significant amounts in other minerals such as lepidote (1.5%), pollucite and carnallite. It is also present in traces in trace amounts in other minerals such as zinnwaldite and leucite.

The amount of rubidium produced every year is small, and what demand there is can be met from a stock of a mixed carbonate by-product that is collected during the extraction of lithium from lepidote.

Rubidium and its salts have few commercial uses. The metal is used in the manufacture of photocells and in the removal of residual gases from vacuum tubes. Rubidium salts are used in glasses and ceramics and in fireworks to give them a purple colour. Potential uses are in ion engines for space vehicles as working fluid in vapour turbines.

Rubidium is one of the most active elements. It catches fire when exposed to oxygen in the air. For that reason, it must be stored completely submerged in kerosene. Rubidium also reacts vigorously with water. It produces hydrogen gas which catches fire and burns. Rubidium combines violently with the halogens (fluorine, chlorine, bromine, and iodine). Rubidium compounds give a purple colour in fireworks.

High amounts of rubidium can be found in coffee, black tea, fruits, and vegetables, particularly asparagus; it can also be found in poultry and fish. Relative non-toxic, rubidium can replace, serve as a partial replacement for, potassium in humans. Rubidium may also have chemotherapeutic properties, possibly reducing the incidence of cancer.

Provided by the element sponsor Morton Bay College

ARTISTS DESCRIPTION

The name originates from 'rubidus' meaning red/deepest red. So I took an original macro photograph of a rusty plough blade for its striking colour and texture. Also metallic elements are in the description and this is duplicated in the rust. The shadows link to the elements that go deep into the Earth's crust.

This is a digital print with my own photographs and scanned elements brought together in Photoshop and blended using a variety of techniques and colouring.

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